

Release of Concrete for Recycle from Decontamination and Decommissioning Projects

This project is an extension of a previous study conducted by Vanderbilt University (VU) to assess the savings potential of recycling concrete generated during the D&D of contaminated DOE facilities. A team comprised of members from INEEL, ANL-E, and VU will establish a set of protocols and deploy proven technologies that will result in an acceptable process to release concrete for unrestricted use as provided by DOE Order 5400.5 and documented in the draft *Handbook for Controlling Release for Reuse or Recycle of Non-Real Property Containing Residual Radioactive Material*. Following release for unrestricted use, concrete rubble will be processed and made available for use as concrete aggregate, road base, or excavation fill material.



Concrete rubble at an INEEL D&D project.

Application:

- These protocols and procedures will be applied at the Engineering Test Reactor, at the INEEL.
- Future application sites include INEEL facilities such as the Materials Test Reactor and Power Burst Facility, as well as facilities undergoing D&D throughout the DOE complex.

Benefits:

- INEEL estimates costs savings of about \$1.6 M to recycle 440,000 c.f. of concrete versus treating the material as contaminated LLW.
- About 300 million c.f. of contaminated concrete exists complex wide representing a potential savings to DOE of \$1.1 billion.

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Support to DDFA Goals:

- Project supports DDFA multi-year work package DD-05 “Material Recycle & Release”. Specific site needs addressed include:
 - » CH-DD07-99 - Decontamination of Fixed Surface Contamination of Concrete
 - » ID-7.2.03 - Concrete Decontamination
 - » ID-7.2.05 - Waste Recycle
 - » ORDD-03 - Improved Decontamination of Facility Concrete and Painted Surfaces
 - » RF-DD04 - Improved Measurement Techniques for Free Release of Property & Salvageable Equipment
 - » RF-DD09 - Improve Decontamination of Porous Surfaces in Preparation for Building Demolition
 - » RL-DD017 - Segregation of Waste for the D&D Program for the Purpose of Disposal
 - » SR99-4003 - Material Recycle
 - » SR99-4002 - Characterization of Contaminated Surfaces
 - » SR99-4004 - Decontamination of Contaminated Concrete
 - » SR99-4011 - Waste Characterization

Funding Profile (thousands of \$):

<u>FY99</u>	<u>FY00</u>	<u>FY01</u>
\$95	\$355	\$50

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Project Scope:

The ATSD project will be implemented in four tasks

- Concrete Characterization
- Develop Authorized Release Protocols
- Deploy Protocols on a Case Study
- Conduct Complex-wide Technology Transfer of Protocols

Status:

- A deployment plan has been prepared and work packages are being written
- Application of the new procedures and actual release and crushing of concrete will be accomplished at the INEEL during FY 2000

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